

## Exercise 204

For the following exercises, use composition to determine which pairs of functions are inverses.

$$f(x) = x^3 + 1, \quad g(x) = (x - 1)^{1/3}$$

### Solution

Take the composition of  $f$  and  $g$  and see if it results in  $x$ .

$$f \circ g = f(g(x)) = f\left((x - 1)^{1/3}\right) = \left[(x - 1)^{1/3}\right]^3 + 1 = (x - 1) + 1 = x$$

Therefore,  $f$  and  $g$  are inverses; they are reflections of one another about the line  $y = x$ .

